

Engineering Technology Certificate

Course #	Course Title	Credits	Prerequisites	Semester Offered	Semester Taken	Grade Earned
ENR101	Introduction to Engineering and Advanced Manufacturing	4	ENL020 & ENL050 or satisfactory basic skills assessment scores	Fall, Spring		
ENR102	3D Mechanical Design I	4	MAT030 or MAT035, ENL020 & ENL050 or satisfactory basic skills assessment scores	Fall, Spring		
CSC120 (or) ENR110	Computer Programming I: C++ (or) Engineering & Scientific Computing	4 3	MAT030 or MAT035 or satisfactory basic skills assessment score and working knowledge of any programming language MAT045, ENL020 & ENL050 or satisfactory basic skills assessment score	Fall Varies		
MAT240	Calculus I	4	MAT190 or MAT195 or satisfactory basic skills assessment score	Fall, Spring, Summer		
COM103	Human Communication	3	ENL010 or ESL102 or satisfactory basic skills assessment score	Fall, Spring, Summer		
Total Credits		18/19				

This certificate has advanced mathematics requirements of Calculus I.

Overview

The Engineering Technology Certificate is a one year program of study that is designed to give students the basic skills and knowledge for initial employment in today's engineering and manufacturing environments. With this in mind, this certificate is structured to achieve two goals. The first is to ensure that the student has acquired the foundational math, programming, and communication skills for success required by the industry. The second goal is to instill in the student an engineering problem solving mindset that is applicable across all engineering and manufacturing disciplines. Students learn and practice the theoretical and physical steps associated with the computer aided design (CAD), analysis, and production of mechanical parts. Additionally, students will hone their critical thinking skills and be well versed in the processes needed to systematically solve problems and to develop an idea into a finished product.

Students that earn this certificate are eligible to enroll in one or more second-level engineering certificates that will prepare them for more advanced employment and or transfer to a Bachelor of Science in engineering program.

Career Outlook

This certificate provides the skills for an entry level general engineering technician or entry level draftsman. Employment of engineering technicians is projected to grow 5 percent from 2012 to 2022. Employment of draftspersons is projected to show little or no change from 2012 to 2022. Nevertheless, there should be opportunities for those who can master new software and technology, as well as traditional manual skills.

This occupational profile is provided by O*NET.
www.onetonline.org/find/quick?s=engineering

Program Outcomes

Upon completion of the Engineering Technology Certificate, students are able to:

- Work as part of a team to plan, design, and fabricate a mechanical device.
- Describe and follow the engineering analysis and design process.
- Communicate effectively, both orally and in writing.
- Conduct research from a variety of sources.
- Organize, schedule, and complete an engineering design project that may require one to collect and interpret technical data as well as exhibit proficiency in software programming.
- Apply mathematical methods for problem-solving and analyze working models of basic engineering systems to solve open-end problems.
- Reverse engineer the design of an existing product or service.
- Test and evaluate an engineering design against a set of requirements.
- Use a variety of instruments and software for taking measurements and or solving problems.